

Application No.: 10/720,967
Docket No.: PE0649 US DIV7

Page 4

REMARKS

Claims 9 has been canceled as directed to the non-elected claims. Claims 10 and 11 have been canceled by the amendments at page 2. The pending claims are 1-8, 12, and 13.

Rejections under 35 U.S.C. § 102

Claims 10 and 11 were rejected under 35 U.S.C. § 102(a) as being anticipated by Thompson et al., Polymer Preprints 41(1), 2000, pp. 770-771 ("Thompson"). Applicants submit that this rejection has been rendered moot by the cancellation of Claims 10 and 11, and respectfully request that this rejection be withdrawn.

Rejections under 35 U.S.C. § 103

The Examiner rejected Claims 1-8 and 10-13 as being obvious in view of a variety of references. Each rejection is addressed separately below.

1. Baldo-1 in view of Dedeian

Claims 1-3 and 10-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Baldo et al. article, Nature, Vol. 403, 17 February 2000, pp. 750-753 ("Baldo-1"), in view of the Dedeian et al. article, Inorganic Chemistry, Vol. 30, 1991, 16895-1687 ("Dedeian"). Claims 10 and 11 have been canceled. Applicants respectfully traverse this rejection with respect to Claims 1-3, 12, and 13.

First, neither *Baldo-1* nor *Dedeian* discloses a device in which an iridium complex is present in an emitting layer in a concentration of at least 20% by weight, as recited in Applicants' Claim 1, and dependent Claims 2-8, 12, and 13. *Baldo-1* teaches only an unsubstituted iridium phenylpyridine complex present as a sensitizer in a host at a concentration of 10%. *Dedeian* teaches the use of iridium phenylpyridine complexes as photoreducing agents. *Dedeian* does not teach or suggest the use of these complexes in electronic devices at any concentration. The Examiner has suggested that "routine optimization" would have led to the use of greater than 20% by weight of the iridium complex. Applicants respectfully disagree. As was discussed in Applicants' specification at page 10, lines 19-24, the iridium complexes had been previously used at low concentrations in a host to avoid self-quenching. There is nothing in the teaching of *Baldo-1* and *Dedeian*, individually and collectively, that would suggest using the iridium complex in a concentration of at least 20% by weight in an emitting layer of an electronic device. To the contrary, *Baldo-1* teaches away from higher concentrations, and *Dedeian* is silent as to the utility in electronic devices.

Second, there is nothing to suggest combining the teachings of *Baldo-1* with *Dedeian*. The utility of the compounds of *Dedeian* as photoreducing agents does not suggest that they would be suitable as electroluminescent materials. There is nothing in the teaching of *Baldo-*

Application No.: 10/720,967
Docket No.: PE0649 US DIV7

Page 5

I to suggest using photoreducing agents, or of putting substituents on the phenylpyridine ligands.

Applicants respectfully submit that a *prima facie* of obviousness has not been established; in view of the above remarks, it is submitted that pending Claims 1-3, 12 and 13, are patentable over *Baldo-1* in view of *Dedeian*. It is respectfully requested that this rejection be withdrawn.

2. *Baldo-1* in view of *Thompson*

Claims 1-3 and 10-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Baldo et al. article, *Nature*, Vol. 403, 17 February 2000, pp. 750-753 ("*Baldo-1*"), in view of the Thompson et al. article, *Polymer Preprints* 41(1), 2000, pp. 770-771 ("*Thompson*"). Claims 10 and 11 have been canceled. Applicants respectfully traverse this rejection with respect to Claims 1-3, 12, and 13.

Neither *Baldo-1* nor *Thompson* discloses a device in which an iridium complex is present in an emitting layer in a concentration of at least 20% by weight, as recited in Applicants' Claim 1, and dependent Claims 2-8, 12, and 13. *Baldo-1* teaches only an unsubstituted iridium phenylpyridine complex present as a sensitizer in a host at a concentration of 10%. *Thompson* teaches an iridium difluorophenylpyridine complex which is present in a host at a concentration from 0.7% to 3.5%. As was discussed above, iridium complexes had been previously used at low concentrations in a host to avoid self-quenching. There is nothing in the teaching of *Baldo-1* and *Thompson*, individually and collectively, that would suggest using the iridium complex in a concentration of at least 20% by weight in an emitting layer of an electronic device. To the contrary, both *Baldo-1* and *Thompson* teach away from higher concentrations.

Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness, and respectfully request that this rejection be withdrawn.

3. *Baldo-1* in view of *Thompson* and further in view of *Baldo-2*

Claims 4-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Baldo et al. article, *Nature*, Vol. 403, 17 February 2000, pp. 750-753 ("*Baldo-1*"), in view of the Thompson et al. article, *Polymer Preprints* 41(1), 2000, pp. 770-771 ("*Thompson*"), and further in view of WO 00/70655 to Baldo et al. ("*Baldo-2*"). Applicants respectfully traverse this rejection.

Baldo-2 teaches that iridium phenylpyridine complexes can be substituted with alkyl or aryl groups (see page 14, line 15, to page 15, line 4). There is no suggestion of any other type of substituent, and certainly not fluorinated substituents. None of the references teaches or suggests the CF₃ substituent of Claims 4, 6, 7, and 8, at any position on the phenylpyridine ligand. *Thompson* does disclose a compound having two F substituents on the phenyl ring of

Application No.: 10/720,967
Docket No.: PE0649 US DIV7

Page 6

the phenylpyridine ligand. However, there is no suggestion in the *Thompson, Baldo-1*, or *Baldo-2* references, individually or collectively, to use an iridium complex with a phenylpyridine ligand having F substituents in an electronic device, where the iridium complex is present at a concentration of greater than 20% by weight, as recited in Applicants' Claim 5.

Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness, and respectfully request that this rejection be withdrawn.

Conclusion

Based on the foregoing amendments and remarks, it is respectfully submitted that the Claims are now in condition for allowance. A Notice of Allowance is earnestly solicited.

Respectfully submitted,



MARY ANN CAPRIA
ATTORNEY FOR APPLICANTS
Registration No.: 32,659
Telephone: (302) 992-3749
Facsimile: (302) 892-7949

Dated:

